

Serial No. 10/039,517  
Atty. Dkt. No. MIO 0059 V2  
Page - 2 -

AMENDMENTS TO THE CLAIMS

(The following includes a complete listing of all claims with their current status indicated. Additional language is underscored; deletions are stricken through.)

Claims 1-29 (Canceled).

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- 21
30. (Withdrawn) A capacitor device comprising:
- a first electrode formed over a substrate;
  - a primarily nitride silicon-containing barrier layer on said first electrode, said barrier layer comprising a silicon-containing material from a precursor layer, previously deposited over at least a portion of said first electrode, that has been reacted with a nitridizing agent;
  - a dielectric layer formed over the primarily nitride silicon-containing barrier layer; and
  - a second electrode formed over the dielectric layer.
31. (Withdrawn) A computer system comprising:
- at least one processor;
  - a system bus;
  - a memory device coupled to the system bus, the memory device including one or more memory cells comprising:
    - a substrate;
    - a drain formed in the substrate;
    - a source rail formed in the substrate;
    - a first oxide layer deposited over the substrate stretching from the drain to the source rail;
    - a silicon-containing barrier layer deposited over the first oxide layer said barrier layer comprising a silicon-containing material from a precursor layer, previously

Serial No. 10/039,517  
Atty. Dkt. No. MIO 0059 V2  
Page - 3 -

deposited over at least a portion of said first electrode, that has been reacted with a reactive agent; and

a gate electrode deposited over the silicon-containing barrier layer.

32. (Currently Amended) A device comprising:

a substrate including at least one semiconductor layer;

a semiconductor device comprising an electrode fabricated proximate to the substrate; and

a barrier layer formed on said electrode from a silicon source previously deposited over at least a portion of the semiconductor device, having been reacted with a reactive agent.

33. (Previously presented) The device of claim 32, wherein the silicon source is a silazane.

34. (Previously presented) The device of claim 32, wherein the silicon source is selected from the group comprising hexamethyldisilazane, tetramethyldisilazane, octamethylcyclotetrasilazine, hexamethylcyclotrisilazine, diethylaminotrimethylsilane and dimethylaminotrimethylsilane.

35. (Previously presented) The device of claim 32, wherein the silicon-containing material is from a silane source.

36. (Previously presented) The device of claim 32, wherein the reactive agent is selected from the group comprising  $\text{NH}_3$ ,  $\text{N}_2$ ,  $\text{O}_2$ ,  $\text{O}_3$ ,  $\text{N}_2\text{O}$  and  $\text{NO}$ .

37. (Previously presented) The device of claim 32, wherein the barrier layer is primarily nitride.

Serial No. 10/039,517  
Atty. Dkt. No. MIO 0059 V2  
Page - 4 -

38. (Previously presented) The device of claim 32, wherein the barrier layer is primarily oxide.

39. (Previously presented) The device of claim 32, wherein the barrier layer is primarily oxynitride.

40. (Currently Amended) A device having a barrier layer comprising:  
a substrate including at least one semiconductor layer;  
a first semiconductor device comprising an electrode fabricated proximate to said substrate;  
a silicon-containing material, previously formed ~~over~~ on at least a portion of said first semiconductor device, that has been reacted with a reactive agent to form a barrier layer; and  
a second semiconductor device formed over said barrier layer.

41. (Previously presented) The method of claim 40, wherein the reactive agent is  $\text{NH}_3$  and the barrier layer is primarily nitride.

42. (Currently Amended) A device having a barrier layer comprising:  
a silicon substrate including at least one semiconductor layer;  
a silicon-containing material from a silazane source, previously formed ~~over~~ on at least a portion of said silicon substrate, that has been reacted with a reactive ambient to form said barrier layer.

43. (Withdrawn) A semiconductor device having a barrier layer comprising:  
a substrate having at least one semiconductor layer;  
a transistor structure formed proximate to said substrate, said transistor structure including  
a source formed in said substrate,  
a drain formed in said substrate, and

Serial No. 10/039,517  
Atty. Dkt. No. MIO 0059 V2  
Page - 5 -

a gate oxide layer formed over an active area between said source and drain; and

a silicon-containing material, previously formed over at least a portion of the transistor structure, that has been reacted with a reactive agent to form the barrier layer.

44. (Withdrawn) The device of claim 43 wherein a gate electrode is formed over said barrier layer.
45. (Withdrawn) The device of claim 43, wherein said gate electrode is doped with phosphor.
46. (Withdrawn) The device of claim 43, wherein said gate electrode is doped with boron.
47. (Withdrawn) The device of claim 43, wherein said reactive agent comprises an oxidizing agent which causes silicon atoms of the silicon-containing material to bond with oxygen atoms of the oxidizing agent.
48. (Withdrawn) A capacitor device comprising:  
an electrode formed over a substrate;  
a silicon-containing material, from a precursor layer previously formed over the electrode, that has been processed using rapid thermal nitridation with a nitridizing reactant to form a barrier layer; and  
a dielectric layer formed over said barrier layer.

Serial No. 10/039,517  
Atty. Dkt. No. MIO 0059 V2  
Page - 6 -

49. (Withdrawn) A semiconductor device having a barrier layer containing no metal comprising:

a substrate including at least one semiconductor layer; and  
a silicon-containing material, from a silicon source previously formed over at least a portion of the semiconductor device, that has been reacted with a reactive agent to form said barrier layer containing no metal.

50. (Withdrawn) A semiconductor device having a barrier layer containing no metal comprising:

a silicon substrate including at least one semiconductor layer; and  
a silicon-containing material, from a silazane source previously formed over at least a portion of the silicon substrate, that has been reacted with a reactive agent to form said barrier layer containing no metal.

51. (Withdrawn) A semiconductor device having a barrier layer containing no metal comprising:

a substrate having at least one semiconductor layer;  
a transistor structure formed proximate to said substrate, said transistor structure including:  
a source formed in said substrate,  
a drain formed in said substrate, and  
a gate oxide layer formed over an active area between said source and drain; and  
a silicon-containing material, previously formed over at least a portion of the transistor structure, that has been reacted with a reactive agent to form said barrier layer containing no metal.

Serial No. 10/039,517  
Atty. Dkt. No. MIO 0059 V2  
Page - 7 -

52. (Withdrawn) A capacitor device with a barrier layer containing no metal comprising:

- an electrode formed over a substrate;
- a silicon-containing material, previously formed over said electrode, wherein said silicon-containing material has been processed using rapid thermal nitridation with a nitridizing reactant to form the barrier layer containing no metal; and
- a dielectric layer formed over said barrier layer.

53. (Withdrawn) A capacitor device comprising:

- a first electrode formed over a substrate;
- a silicon-containing barrier layer formed over at least a portion of said first electrode, said barrier layer comprising a silicon-containing material from a precursor layer previously deposited over at least a portion of said first electrode from a silicon source, reacted with a reactive agent selected to react with silicon of the silicon-containing material;
- a dielectric layer formed over said silicon-containing barrier layer; and
- a second electrode formed over the dielectric layer.

54. (Withdrawn) The capacitor device of claim 53, wherein the silicon source is a silazane.

55. (Withdrawn) The capacitor device of claim 53, wherein the silicon source is selected from the group comprising hexamethyldisilazane, tetramethyldisilazane, octamethylcyclotetrasilazane, hexamethylcyclotrisilazane, diethylaminotrimethylsilane and dimethylaminotrimethylsilane.

56. (Withdrawn) The capacitor device of claim 53, wherein the silicon-containing material is from a silane source.

Serial No. 10/039,517  
Atty. Dkt. No. MIO 0059 V2  
Page - 8 -

57. (Withdrawn) The capacitor device of claim 53, wherein the reactive agent is selected from the group comprising  $\text{NH}_3$ ,  $\text{N}_2$ ,  $\text{O}_2$ ,  $\text{O}_3$ ,  $\text{N}_2\text{O}$  and  $\text{NO}$ .
58. (Withdrawn) The capacitor device of claim 53, wherein the barrier layer is primarily nitride.
59. (Withdrawn) The capacitor device of claim 53, wherein the barrier layer is primarily oxide.
60. (Withdrawn) The capacitor device of claim 53, wherein the barrier layer is primarily oxynitride.
61. (Withdrawn) A device having a precursor layer comprising:  
a substrate including at least one semiconductor layer;  
a first semiconductor device fabricated proximate to said substrate; and  
a metal-free silicon-containing precursor layer formed over at least a portion of said first semiconductor device.
62. (Withdrawn) The device of claim 61, wherein the silicon precursor layer comprises a silazane.
63. (Withdrawn) The device of claim 61, wherein the silicon-containing precursor layer is selected from the group comprising hexamethyldisilazane, tetramethyldisilazane, octamethylcyclotetrasilazane, hexamethylcyclotrisilazane, diethylaminotrimethylsilane and dimethylaminotrimethylsilane.
64. (Withdrawn) The device of claim 61, wherein the silicon-containing precursor layer comprises a silane.

Serial No. 10/039,517  
Atty. Dkt. No. MIO 0059 V2  
Page - 9 -

65. (Withdrawn) A device having a precursor layer comprising:  
a silicon substrate including at least one semiconductor layer;  
a precursor layer comprising a metal-free silicon-containing material formed over  
at least a portion of said silicon substrate.

66. (Withdrawn) A semiconductor device having a precursor layer comprising:  
a substrate including at least one semiconductor layer; and  
a precursor layer comprising a metal-free silicon-containing material from a  
silazane source formed over at least a portion of said at least one semiconductor layer.

67. (Withdrawn) A semiconductor device having a precursor layer containing no  
metal comprising:  
a silicon substrate including at least one semiconductor layer; and  
a precursor layer comprising a metal-form silicon-containing material from a  
silane source formed over at least a portion of said silicon substrate.

68. (Withdrawn) A semiconductor device having a precursor layer comprising:  
a substrate having at least one semiconductor layer;  
a transistor structure formed proximate to said substrate, said transistor  
structure including  
a source formed in said substrate,  
a drain formed in said substrate, and  
a gate oxide layer formed over an active area between said source and  
drain; and  
a precursor layer comprising a metal-free silicon-containing material  
formed over at least a portion of the transistor structure.

69. (Withdrawn) The device of claim 68, wherein a gate electrode is formed over  
said barrier layer.



Serial No. 10/039,517  
Atty. Dkt. No. MIO 0059 V2  
Page - 10 -

70. (Withdrawn) The device of claim 68, wherein said gate electrode is doped with phosphor.

71. (Withdrawn) The device of claim 68, wherein said gate electrode is doped with boron.

72. (Withdrawn) A capacitor device comprising:  
an electrode formed over a substrate; and  
a precursor layer comprising a metal-free silicon-containing material formed over the electrode.

73. (Withdrawn) A capacitor device comprising:  
an electrode formed over a substrate; and  
a precursor layer comprising a metal-free silicon-containing material from a silazane source formed over the electrode.

74. (Withdrawn) A capacitor device comprising:  
an electrode formed over a substrate; and  
a precursor layer comprising a metal-free silicon-containing material from a silane source formed over the electrode.

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